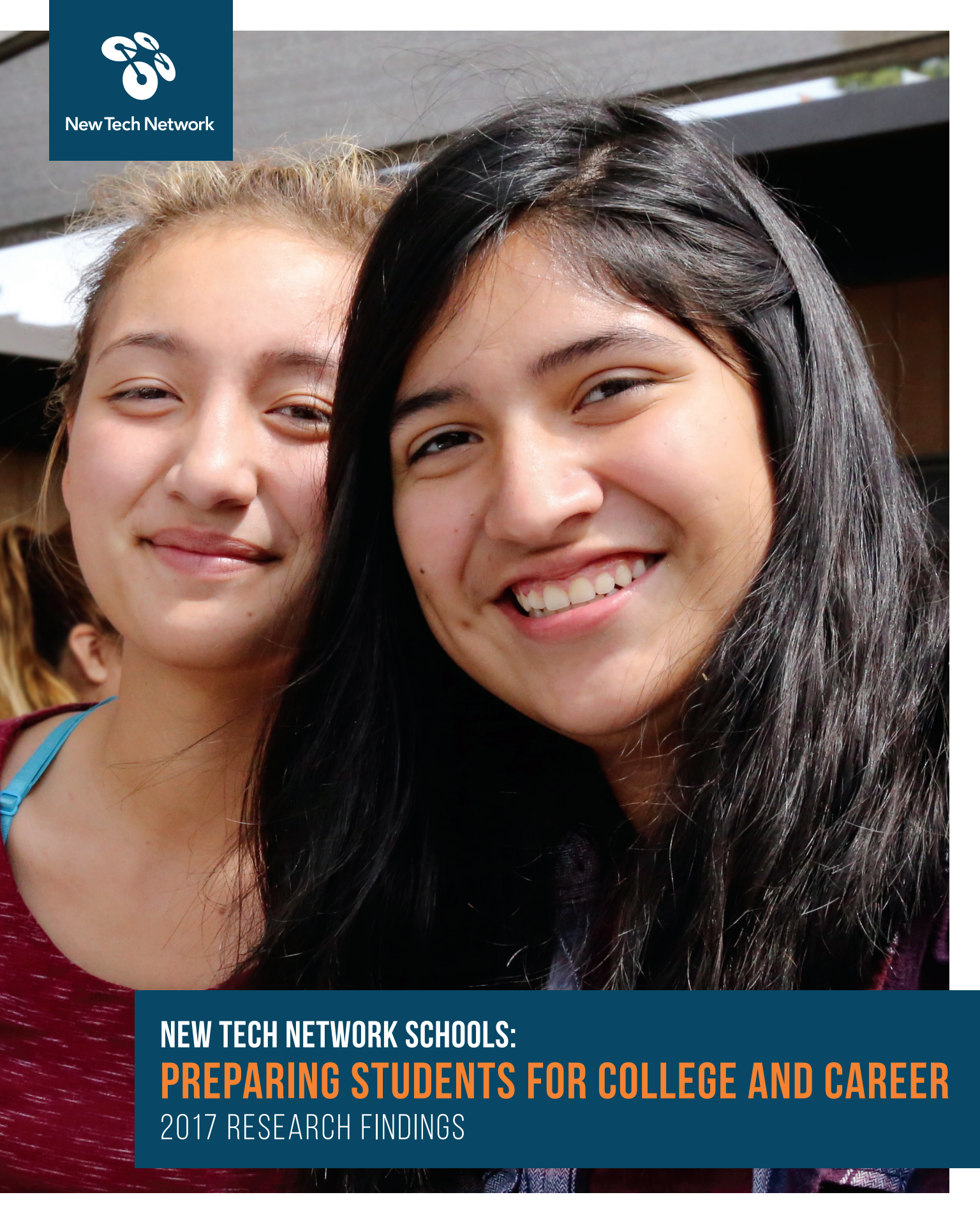




New Tech Network



NEW TECH NETWORK SCHOOLS:
PREPARING STUDENTS FOR COLLEGE AND CAREER
2017 RESEARCH FINDINGS

NEW TECH SCHOOL MODEL AND EVIDENCE

New Tech Network works with schools around the country to transform teaching and learning. New Tech Network's vision for student success is college and career readiness for all students. This report, produced by the New Tech Network's Research and Measurement (RAM) department, provides evidence of the impact of the intended outcomes of the New Tech model.

The research department supports individual schools and the network by engaging in a variety of research activities. Research activities can be organized broadly into three types: 1) impact, 2) formative, and 3) quality assurance. Formative and quality assurance research is used internally by NTN and our schools to refine services and inform implementation. Impact research is external facing research designed to document and communicate the effect of an NTN education; impact research is the focus of this publication.

The research studies summarized in this report provide rigorous evidence of different aspects of the impact of the intended outcomes of the New Tech Model. Impact research examines student, school, and learning environment outcomes embodied in the four design pillars: teaching that engages, culture that empowers, outcomes that matter, and technology that enables. The NTN model is comprised of a variety of intended outcomes, such as discipline-specific knowledge, student agency, student collaboration, school culture, and relevant learning environments. In research projects, these outcomes are operationalized as constructs that can be measured and studied.

Some common research constructs examined in NTN impact research include: academic outcomes, nonacademic outcomes, and deeper learning. Academic outcomes are typically measured using tools that are comparable across schools, such as state exams or college entrance exams. Nonacademic outcomes are often measured using surveys, assessments, observations, and student products. Deeper

learning is often organized into overlapping, or sub-constructs, like self-regulation, self-efficacy, and locus of control, that are measured using surveys, observations, document analysis, and student products.

The New Tech Network research department employs both ongoing data collection and targeted projects to measure impact, prioritizing sophisticated and appropriate analytical methods. The research department not only conducts its own research, but also partners with external experts to reduce bias and ensure results are rigorous, relevant, and widely disseminated. Ongoing NTN efforts include analysis of high school graduation rates across the network, National Student Clearinghouse data to document college enrollment and persistence, and College Work Readiness Assessment (CWRA+) data to document growth in critical thinking. Targeted projects are typically executed by external experts in their respective fields. Consider the seminal work, *The Study of Deeper Learning: Opportunities and Outcomes*, conducted by Dr. Kristina Zeiser at the American Institutes of Research (AIR) summarized in this publication. Dr. Zeiser is a sought-after expert on measuring deeper learning. AIR included New Tech Schools in their grant funded work, and we are thrilled to capitalize on this relationship and to share the details of the project with the NTN community.

Each research project, ongoing or targeted, provides a different lens to view the effect of the New Tech School Model. Each study can stand alone or be viewed collectively as a source of evidence of the impact of a NTN education.



LIZ BERGERON, PH.D.
DIRECTOR OF RESEARCH

RESEARCH FINDINGS:

NTN STUDENT ACADEMIC SUCCESS

A variety of data sources and research findings were evaluated to document the impact of the NTN model.



New Tech Network students outperformed similar non-NTN students on state EOC exams



New Tech Network students outpaced the national average in high school graduation and college persistence



New Tech Network schools and other deeper learning network schools demonstrated higher scores on measures of cognitive, interpersonal, and intrapersonal competencies



New Tech Network high school students show considerably more growth in critical thinking skills



New Tech Network school successfully increased opportunities for under-represented STEM students



NTN STUDENTS OUTPERFORM

New Tech Network students outperformed similar non-NTN students on state EOC exams.

SAMPLE

ANCOVA tests were used to determine the effect of the New Tech Network model on academic year 2015-16 student achievement in 4 NTN schools and 4 comparison schools in the southeastern United States, controlling for 8th grade state exam score, race, and free and reduced lunch (FRL) status.

KEY FINDING

Compared to similar students, New Tech Network (NTN) 9th graders outperformed comparison students on End of Course (EOC) Math and EOC English Language Arts (ELA) exams and NTN 11th graders outperformed comparison students on ACT composite scores¹ (Stocks, Odell, & Culclasure, 2016; Culclasure, Odell, & Stocks, 2017).

New Tech Network students outperformed similar non-NTN students on the ACT.

ACT COMPOSITE PERCENTILE

ANCOVA Results Comparing NTN and Non-NTN Students on ACT composite percentile AY 2015-16



¹ The ACT composite score is a percentile



NEW TECH STUDENTS OUTPACE

New Tech Network students outpaced the national average in high school graduation and college persistence.

SAMPLE

28 New Tech Network Title 1 Eligible Schools to calculate 2014 Title 1 outcomes; 55 schools to calculate 2016 graduation rates; 45 NTN schools to calculate 2015 enrollment; 35 NTN schools to calculate 2014 persistence.



KEY FINDING

National Student Clearinghouse (NSC) data was used to evaluate college enrollment and college persistence rates for NTN schools. School level data collected from NTN schools was used to evaluate high school graduation rates. On average, participating NTN schools had a higher 2016 high school graduation rate (92% compared to 83%¹), class of 2015 immediate college enrollment across all institution types (70% compared to 69%²), and class of 2014 first-year persistence rates across all institution types (82% compared to 78%³).

Compared to similar groups nationally, NTN schools eligible for schoolwide Title 1 had higher graduation and enrollment rates for the class of 2014. Nationally, in 2014 economically disadvantaged students had a high school graduation rate of 75%⁴ and the immediate college enrollment rate for students from low income families was 58%⁵. For the class of 2014, NTN schools eligible for schoolwide Title 1 had an average HS graduation rate of 93% and college enrollment rate of 59%.

¹Public high school 4-year adjusted cohort graduation rate (ACGR), by race/ethnicity and selected demographics for the United States is available by year from the Common Core of Data (CCD) maintained by National Center for Education Statistics (NCES). The most current data available was used for comparisons. https://nces.ed.gov/ccd/tables/ACGR_RE_and_characteristics_2014-15.asp

²NCES data from the Digest of Education Statistics. https://nces.ed.gov/programs/digest/d16/tables/dt16_302.10.asp?current=yes

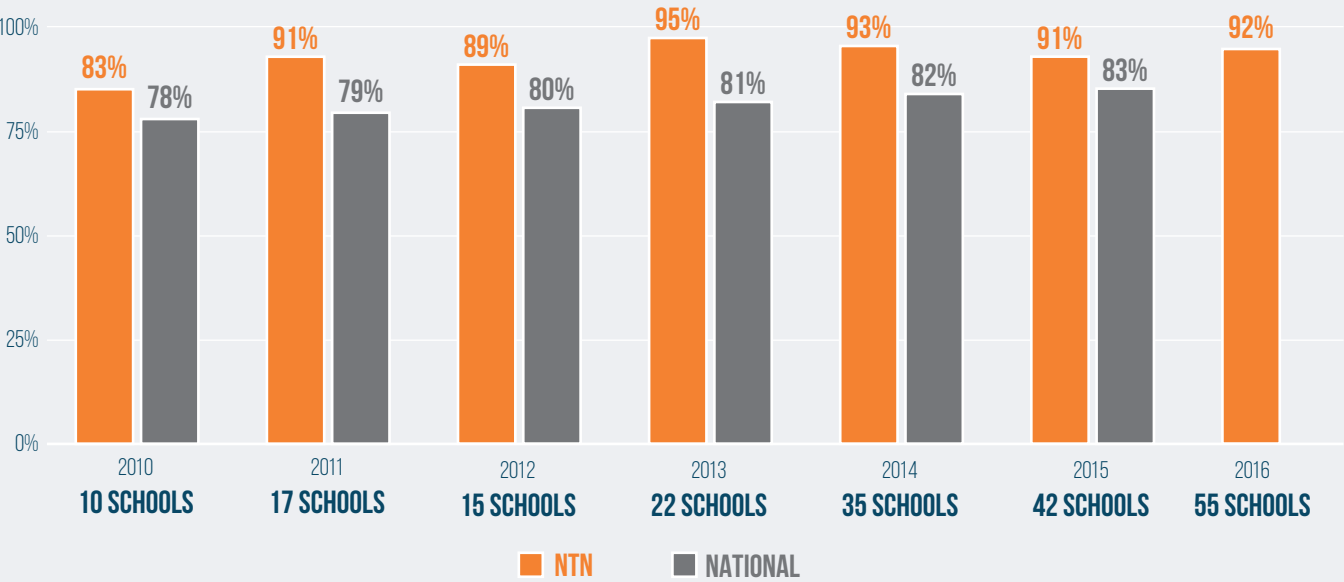
³Data from National Student Clearinghouse participating high schools (27% of U.S. high schools) <https://nscresearchcenter.org/snapshotreport-persistence/retention22/>

⁴The most current ACGR data available from the Digest of Education Statistics was used for comparisons. https://nces.ed.gov/programs/digest/d15/tables/dt15_219.46.asp

⁵NCES data from the Digest of Education Statistics. https://nces.ed.gov/programs/digest/d15/tables/dt15_302.30.asp

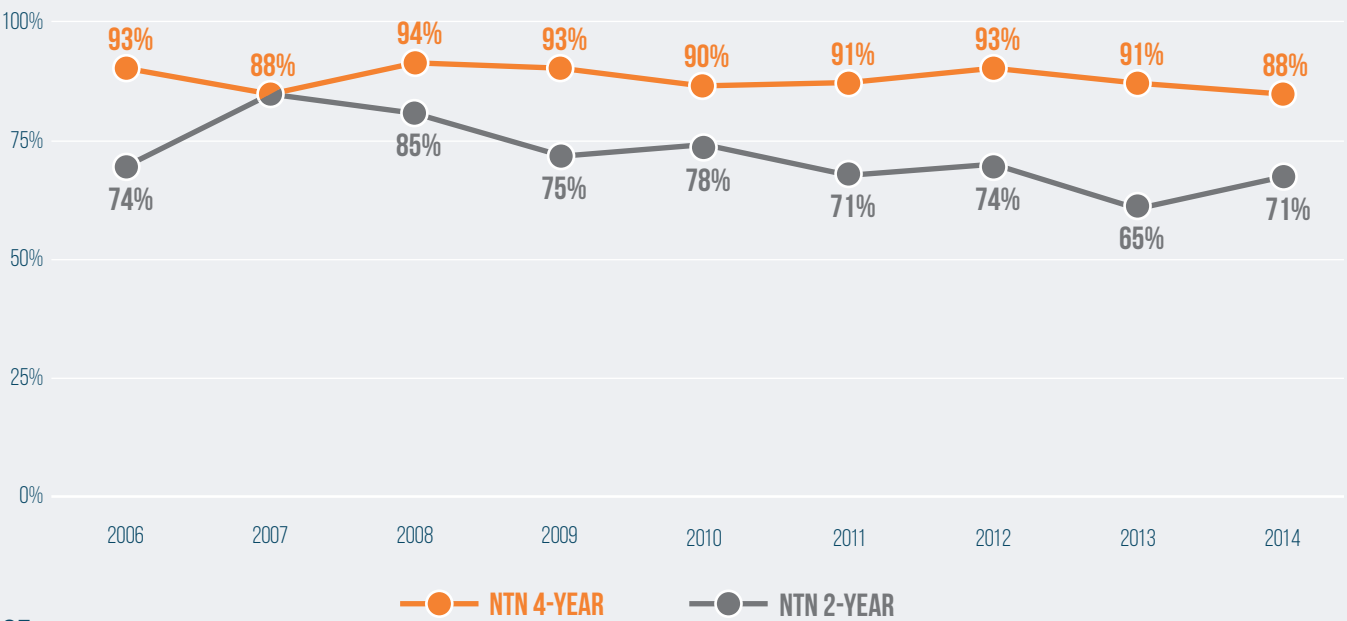
New Tech Network students graduate high school at a rate 9 percentage points greater than the national average.

AVERAGE COHORT GRADUATION RATES



New Tech Network students persist in college at a rate of 82%.

COLLEGE PERSISTENCE RATES



DEEPER LEARNING NETWORKS

New Tech Network schools and other deeper learning network schools demonstrated higher scores on measures of cognitive, interpersonal, and intrapersonal competencies.

SAMPLE

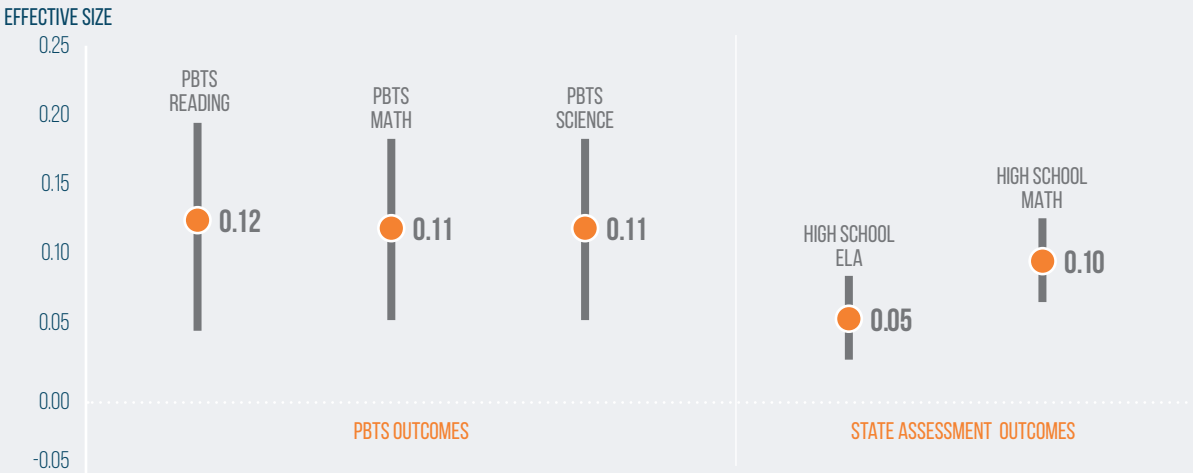
New Tech Network was one of ten school networks that participated in the William and Flora Hewlett Foundation's *Deeper Learning Community of Practice*, which included nineteen deeper learning network schools.



KEY FINDING

Compared to matched similar non-deeper-learning schools, students who attended deeper learning network schools scored higher on all three OECD PISA-Based Test for Schools (PBTS) subjects tested (reading, mathematics, and science). They also earned higher scores on the state English Language Arts (ELA) and mathematics tests. Students who attended network schools reported higher levels of interpersonal and intrapersonal competencies, such as collaboration, academic engagement, motivation to learn, and self-efficacy. Network students were more likely to graduate from high school on time (i.e., within four years), enroll in four-year postsecondary institutions, and enroll in selective institutions (Zeiser, Taylor, Rickles, Garett, & Segeritz, 2014).

ESTIMATED AVERAGE EFFECT OF ATTENDING A NETWORK SCHOOL ON STUDENT'S COGNITIVE COMPETENCY OUTCOMES¹



Note: The plotted points represent the meta-analytic average effect estimate for each PBTS and high school achievement score (see Technical Appendix², section IV.B for a detailed description of the analytic method), and the vertical bars represent each estimate's 95 percent confidence interval. Effect sizes are significant when the full confidence interval lies above or below the zero line (all measures in this chart).

¹This image is reproduced with author permission from Report 3: Evidence of Deeper Learning Outcomes (Zeiser, Taylor, Rickles, Garett, & Segeritz, 2014).

²The Technical Appendix and full report are available from AIR here: <http://www.air.org/resource/evidence-deeper-learning-outcomes>

GROW IN CRITICAL THINKING SKILLS

New Tech Network high school students show considerably more growth in critical thinking skills.

SAMPLE

13 New Tech Network schools participated in 2013-14 and 2015-16; 12 New Tech Network schools participated in 2012-13 and 2014-15.



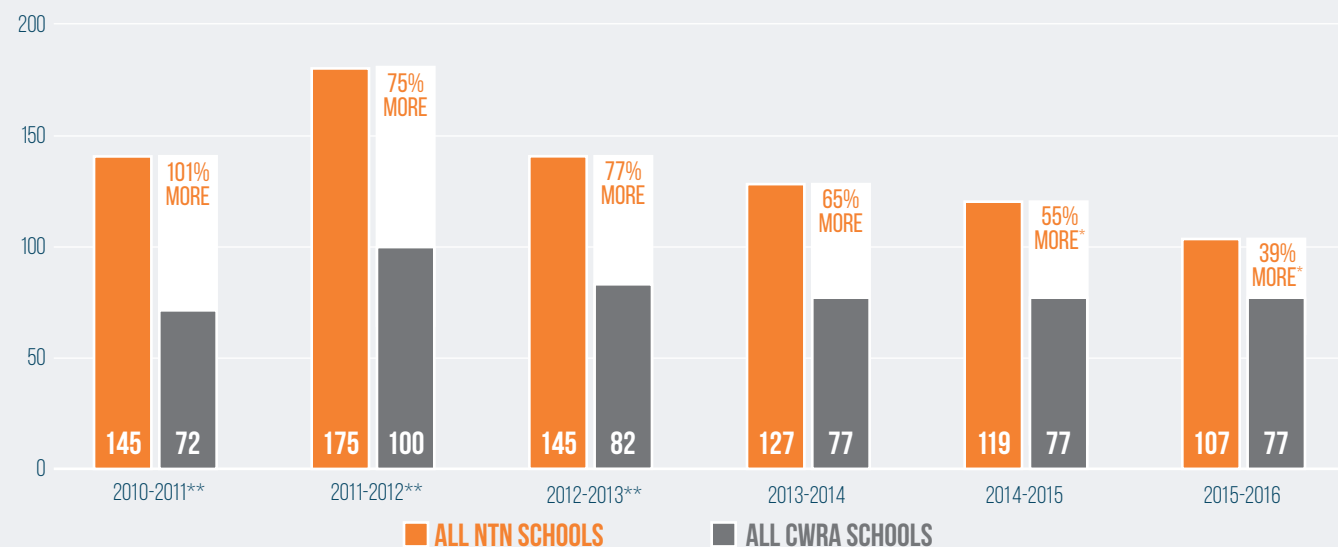
KEY FINDING

Critical thinking skills were measured using the College and Work Readiness Assessment Plus (CWRA+) administered by Council for Aid to Education (CAE). NTN high school students compared to non-NTN students consistently demonstrated that NTN students experience more growth than non-NTN students with an average growth of 52% more than the CAE sample over the last 3 years (CAE, 2014; CAE, 2015; CAE, 2016). These findings hold when New Tech Network students are compared to matched similar students at non-NTN schools (CAE, 2014).

New Tech Network students are estimated to grow 52% more in higher order thinking skills.

CWRA+ COMPARISON

On average¹, NTN students grow 52% more in higher order thinking skills between freshmen and senior years than all students participating in CWRA.



* CWRA comparison is based on 2013-2014 administration when assessment scaling was determined.

** The CWRA test version was used prior to 2013-14. CWRA+ test version was introduced in 2013-14.

¹ 3 year weighted average

INCREASE IN OPPORTUNITIES FOR ALL

New Tech Network school successfully increased opportunities for under-represented STEM students.

SAMPLE

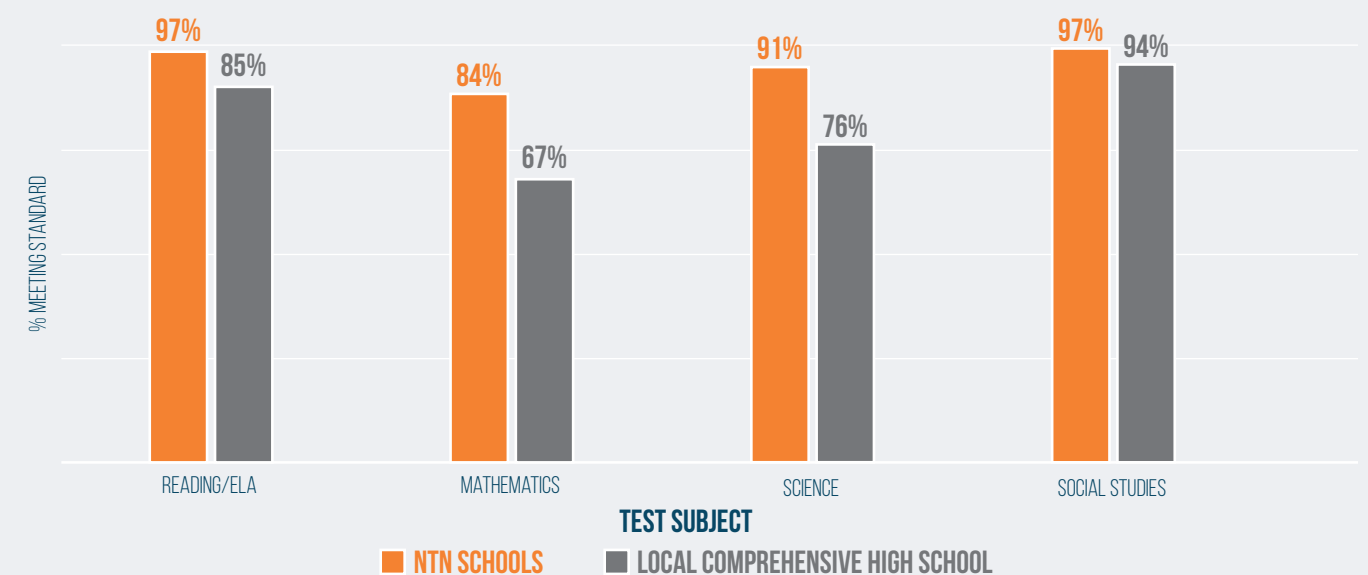
One New Tech high school was identified as a successful inclusive STEM school and evaluated as a part of the Opportunity Structures for Preparation and Inspirations research.



KEY FINDING

The New Tech Network school included in the analysis successfully increased opportunities for under-represented STEM students (Spillane, Lynch, & Ford, 2016). Project-based learning in the NTN school created an instructional environment that positively impacted student learning, relationships, and technology use. The learning community improved student self-efficacy. Not only did students learn 21st century skills, but also they incorporated them into projects. The NTN school had higher attendance rates than the comprehensive high school and the NTN school had a higher percentage of students “meeting standard” on the state test. Nearly all NTN students in the research graduated from high school and were accepted to college (Lynch, Spillane, Peters Burton, Behrend, Ross, House, & Han, 2013).

2010-2011 PERCENT OF STUDENTS “MEETING STANDARD” ON THE STATE TEST



Source: Spillane, N. K., Lynch, S. J., & Ford, M. R. (2016). Inclusive STEM high schools increase opportunities for underrepresented students. *Phi Delta Kappan*, 97(8), 54-59. doi:10.1177/0031721716647021

REPORTS AND PUBLICATIONS DOCUMENTING NTN IMPACT

High Impact Reports

College and career readiness

Culclasure, B., Odell, M., & Stocks, E. (2017, July). New Tech Network Interim Evaluation Report: Project Years 2013-14, 2014-15, and 2015-16. Expanded Evaluation and i3 Samples. Greenville, SC: Furman University.

Researchers from the Riley Institute at Furman University and from the University of Texas at Tyler (UTT) jointly conducted a study of four high schools that have recently transitioned into New Tech schools. This study had five components: a fidelity analysis; an analysis of outcome variables; an analysis of college and career ready variables; a teacher survey administered to New Tech teachers in the four project schools; and a culture and climate survey administered to New Tech administrators and teachers in the four project schools.

Sample size: Four New Tech Schools and a statistically similar comparison sample

Methods: Quasi-experimental design (QED)

Year: 2014-15 and 2015-16 Academic Years (AY)

Location: Southeastern United States

Findings: The AY 2014-15 report examined NTN 9th grade outcomes. Compared to similar students, NTN 9th graders outperformed control students on End of Course (EOC) Math and EOC English Language Arts (ELA) exams. This effect remained after controlling for Poverty, Race, and Pre-existing Achievement Level (8th grade state scores). College and career readiness was measured using the College and Work Readiness Assessment (CWRA). Analysis of CWRA results indicated NTN students outperformed similar non-NTN students on most sections. The AY 2015-16 report examined 9th, 10th, and 11th grade student outcomes. Compared to similar students, NTN 9th graders outperformed controls students on EOC Math and ELA. Compared to similar students, NTN 11th graders outperformed controls students on ACT composite scores. In all areas examined (Workkeys, ACT subject tests, dropout, retention, dual enrollment), NTN students either outperformed similar students or no difference was found.

Related research:

Stocks, E., Odell, M., & Culclasure, B. (2016, October). Strategies for Handling Unexpected Changes When Evaluating Education Projects. Presentation at the annual American Evaluation Association (AEA) Evaluation and Design Conference, Atlanta, GA.

Zeiser, K., Taylor, J., Rickles, J., Garet, M. S., & Segeritz, M. (2014). Evidence of deeper learning outcomes. (Report #3 Findings from the study of deeper learning: Opportunities and outcomes). Washington, DC: American Institutes for Research.

The purpose of this study was to evaluate high schools with a mature and at least moderately well implemented approach to promoting deeper learning and determine if the students who attended these schools actually experienced greater deeper learning than their peers at schools not focused on promoting deeper learning. New Tech Network was one of ten school networks that participated in the William and Flora Hewlett Foundation’s Deeper Learning Community of Practice.

Sample size: 19 high schools across 10 school networks, including 2 New Tech Network schools

Methods: A mixed methods approach including interviews, observations, surveys, student work, and student performance data.

Year: 2014

Location: National

Findings: Compared to matched similar non deeper-learning schools, students who attended deeper learning network schools scored higher on all three OECD PISA-Based Test for Schools (PBTS) subjects tested (reading, mathematics, and science). They also earned higher scores on the state English Language Arts (ELA) and mathematics tests. Students who attended network schools reported higher levels of interpersonal and intrapersonal competencies, such as collaboration, academic engagement, motivation to learn, and self-efficacy. Network students were more likely to graduate from high school on time (i.e., within four years), enroll in four-year postsecondary institutions, and enroll in selective institutions.

Related research:

Bitter, C., Taylor, J., Zeiser, K. L., & Rickles, J. (2014). Providing opportunities for deeper learning (Report #2 Findings from the study of deeper learning: Opportunities and outcomes). Washington, DC: American Institutes for Research.

Huberman, M., Duffy, H., Mason, J., Zelser, K. L. & O’Day, J. (2016). School Features and Student Opportunities for Deeper Learning: What Makes a Difference? Washington, DC: American Institute for Research.

Project-based learning

Lynch, S. J., Spillane, N. K., Peters Burton, E., Behrend, T. S., Ross, K. M., House, A., & Han, E. M. (2013). Manor New Tech High School: A case study of an Inclusive STEM-focused high School in Manor, Texas. Washington, D.C.: George Washington University Opportunity Structures for Preparation and Inspiration (OSPrl). OSPrl Report 2013-01.

Manor New Tech High School (MNTHS) was one of twelve inclusive STEM schools evaluated as a part of the Opportunity Structures for Preparation and Inspirations research that sought to develop a model for how successful STEM schools work. MNTHS was an “exemplar” inclusive STEM-focused school and was chosen for the study based on promising elements in their design and outcomes. MNTHS met the ten critical components identified by the research team, that help students graduate with high academic achievement and tangible skills. MNTHS met the following criteria: STEM-focused curriculum; reform instructional strategies and project-based learning; integrated, innovative technology use; blended formal/informal learning beyond the typical school day, week, or year; real-world STEM partnerships; early college-level coursework; well-prepared STEM teaching staff; inclusive STEM mission; functional administrative structure; and supports for underrepresented students.

Sample size: Twelve inclusive STEM schools, 1 New Tech Network school

Methods: Mixed methods approach of ethnography, interviews and surveys as well as student performance data

Year: 2013

Location: Manor, Texas

Findings: Analysis suggested that project-based learning created an instructional environment that positively impacted student learning, relationships, and technology use. The learning community appeared to improve student self-efficacy. Not only did students learn 21st century skills, but also

they incorporated them into projects consistently. Nearly all NTN students in the research study graduated from high school and were accepted to college.

Additional research reports

College and career readiness

Bergeron, L. (2017, February). Examining Student Outcomes in New Tech Network Title 1 Eligible Schools. Roundtable paper presentation at the annual conference of the Eastern Educational Research Association, Richmond, VA.

Sample size: 28 New Tech Network Title 1 Eligible Schools

Methods: Descriptive analysis

Year: 2014 data

Location: National

Findings: NTN schools eligible for schoolwide Title 1 had higher graduation and enrollment rates for the class of 2014 than the national average. Nationally, in 2014, students designated as economically disadvantaged had a graduation rate of 75% and the college enrollment rate for students from low-income families was 58%. For the class of 2014, NTN schools eligible for schoolwide Title 1 had an average HS graduation rate of 93% and college enrollment rate of 59%.

Dobyns, L., Walsh, C., Lee, P., & Cuilla, K. (2012). Impacting Rural Academic Achievement and Economic Development: The Case for New Tech Network High Schools. Napa: New Tech Network.

Sample size: Two New Tech Schools with an average population of 400

Methods: Mixed methods, measurements of achievement were used in a comparative analysis (by sample design), qualitative analysis of in-person interviews was used.

Year: 2012

Location: Rural North Carolina

Findings: Results suggested that the New Tech model is successful in preparing students for college and career. Both NTN schools had high school graduation rates of 100%, while the district averages (71% and 76%) and comparison high school averages (75% and 77%) were lower. NTN students had higher attendance rates and composite SAT scores than the district and comparison high schools. Business owners consistently described NTN interns as prepared, self-directed, mature, committed, persistent, professional,

and curious.

Gourgey, Hannah. (2009). *Case Study of Manor New Tech High School: Promising Practices for Comprehensive High Schools*. Austin, TX: E3 Alliance.

Sample size: 1 New Tech High School (332 Students).

Methods: E3 Alliance used a mixed methods approach of interviews and surveys as well as (limited) student performance data.

Year: 2009

Location: Texas

Findings: An analysis of the short-term and longer-term outcome data for Manor New Tech High School indicated that their students were succeeding in high school and immediately beyond.

Rockman et al. (2006). *New Technology High School Post-secondary Student Success Study*. San Francisco, CA: Rockman et al. Retrieved from New Tech Network website: <https://newtechnetwork.org/resources/new-technology-high-school-postsecondary-student-success-study/>

Sample size: 224 New Tech alumni

Method: survey responses

Year: 2006

Location: Napa New Technology High School, California.

Findings: Results suggested that New Technology High School is strongly based in 21st century principles, including the use of technology for communication and learning. Survey analysis indicated 89% of the responding alumni attended a two-year or four-year college/university or professional or technical institute and 40% of the alumni respondents were either majoring in STEM fields or were working in STEM professions.

Young V. M., House, A., Wang, H., Singleton, C., & Klopfenstein, K. (2011). *Inclusive STEM Schools: Early Promise in Texas and Unanswered Questions (Draft 2011-01)*. Dallas, TX: University of Texas and SRI International.

Sample size: 51 academies and 7 T-STEM technical assistance centers in Texas, including “some New Tech Network” schools

Methods: 4-year longitudinal evaluation of the Texas High School Project (THSP) using a mixed-methods design, including qualitative case studies; principal, teacher, and student surveys; and a quasi-experimental approach.

Year: 2011

Location: Texas

Findings: T-STEM academies had small but statistically significant, positive effects in standardized math scores for ninth-graders and in standardized math and science scores for 10th-graders compared to peers in matched schools.

Learning environment

Center of Excellence in Leadership of Learning (CELL). (2011). *Research Report for Fourth-Year Implementation of New Tech High Schools in Indiana*. Indianapolis, IN: University of Indianapolis.

Sample size: 16 NTN High Schools

Methods: A mixed methods approach including interviews, observations, document review, surveys, and quantitative analysis of teacher and student data.

Year: 2011

Location: Indiana

Findings: Findings suggested that the New Tech Network schools in Indiana: 1) implemented project-based learning with high fidelity, 2) demonstrated consistent and efficient use of teacher and student technology, 3) attained higher attendance rates when compared to similar non New Tech schools, and 4) took disciplinary action via expulsion and suspension less than similar non New Tech schools.

Traphagen, Kathleen. (2013). *Time for Deeper Learning: Lessons from Five High Schools*. Boston, MA: National Center on Time and Learning (NCTL).

Sample size: Five High Schools, including 1 New Tech Network School

Methods: Single school case studies were conducted. Researchers conducted site visits and interviews to document effective practices.

Year: 2013

Location: Minnesota, Massachusetts, New York, California, Indiana

Findings: The 5 case study schools were successful in creating deeper learning environments because educators restructured how time is used for learning and how teachers use time to build new skills. The author suggested that a conventional school schedule might not offer sufficient time to support all students in acquiring the full range of deeper learning skills.

Project-based learning

English, M.C. (2013). *The Role of Newly Prepared PBL Teachers’ Motivational Beliefs and Perceptions of School Conditions in Their Project Based Learning Implementation (Unpublished doctoral dissertation)*. George Mason University, Fairfax, VA.

Sample size: Primary participants were 180 non-New Tech teachers and 163 New Tech teachers at the elementary, middle, and high school level who had attended PBL training.

Methods: A survey study was conducted, relying primarily on correlational analyses to provide a general picture of the research problem, and supplementing with qualitative data.

Year: 2013

Location: National

Findings: The variable “NTN” or “non-NTN”, played the largest role in extent of implementation of PBL. Perceived value was an important element of teachers’ willingness to commit to PBL. The most powerful influence on value was found to be observation of students experiencing high levels of motivation, engagement, or performance. Also, teachers in PBL-conducive environments had higher levels of perceived value for PBL. Schools that provided ample professional development, opportunity for collaboration, common planning time, a flexible curriculum, ample technology, and other resources enabled successful implementation of PBL.

National Center for Learning Disabilities. 2017. *Experiences in Practice: The Role of Project-Based Learning at Warren New Tech High School*. New York, NY: Author.

Sample size: 1 New Tech School

Methods: Qualitative case study

Year: 2016

Location: North Carolina

Findings: This implementation study documented Warren New Tech’s 8 Step implementation process and the resulting benefits for all students, specifically students with disabilities. The case study enumerated specific benefits for a student with ADHD: 1) authentic project design enabled sustained focus, 2) the longer duration of projects enabled more investment, and 3) the emphasis on a variety of skills enabled a focus on student strengths as opposed to challenges.

Ravitz, Jason. (2010). *Beyond changing culture in small high schools: Reform models and changing instruction with*

project-based learning. *Peabody Journal of Education*, 85(3), 290-313. doi:10.1080/0161956X.2010.491432.

Sample size: 395 teacher survey responses from a variety of U.S. public high schools—92 in large, comprehensive high schools, 129 in other small schools and small learning communities, and 174 in four different reform networks (New Tech High, High Tech High, EdVisions, and Envision Schools).

Methods: Quantitative analysis of teacher surveys

Year: 2010

Location: National

Findings: The New Tech Network was categorized as one of the model high school reform networks in this study. Results suggested that reform model schools “are setting the bar for PBL use and transformation of student culture.” Reform model schools reported more cultural and instructional reforms than non-reform schools.

School culture

Reed, Sherrie. (2015). *School Climate in a School Reform Network: How Do Student Perceptions Differ?* (Unpublished doctoral dissertation). University of California-Davis, Davis, CA.

Sample size: Responses from over 10,000 students across 72 New Tech Network schools

Method: Quantitative analysis of the NTN Student Culture Survey

Year: 2013-2014 data

Location: National

Findings: Differences in students’ perceptions across schools suggested that reform efforts aimed at improving school climate may be more successful with the establishment of new small learning communities as opposed to converting large existing schools. Yet, student experiences differed more within schools than between schools. Reform efforts, then, should focus less on ensuring continuity of experience across schools within a network and more on ensuring similar experiences for students within the same school.

Reed, S. & Lee, P. (2014, April). *Developing a Supportive Learning Culture Across a Diverse Network of Schools*. Paper presentation at the annual conference of the American Educational Research Association, Philadelphia, PA.

Sample size: 129 schools

Methods: Quantitative analysis of student responses from

the 2013-2014 NTN Student Culture Survey.

Year: 2013-2014 school year data

Location: National

Findings: Survey results suggested that there is a relationship between the purposeful development of school culture and the student experience. In general, the researchers identified statistically significant but low magnitude differences between students of various racial groups, with the greatest differences noted between African American students and all other racial groups. Statistically significant differences between students in newly founded schools and those in schools with a long history in New Tech Network were evident.

Policy Papers

Friedlaender, D., Darling-Hammond, L., et. al. (2007). *High Schools for Equity: Policy Supports for Student Learning in Communities of Color*. Stanford, CA: The School Redesign Network and Justice Matters at Stanford University.

Sample size: 5 urban High Schools, 1 NTN School

Methods: A mixed method approach is used describing characteristics of schools and student performance data.

Year: 2007

Location: California

Findings: These schools, including New Tech High School of Sacramento, demonstrate that personalization and models such as NTN’s serve low-income students of color well.

Honey, M., Pearson, G., & Schweingruber, H. (2014). *STEM Integration in K-12 Education: Status, Prospects, and an Agenda for Research*. Washington, D.C.: National Academies Press.

Sample size: 28 programs, projects, schools, and other initiatives engaged in integrated STEM education were evaluat-

ed, including 1 New Tech Network school.

Methods: The study reviewed literature on current STEM programs, with an emphasis on those that link multiple STEM categories, to assess which programs could be useful in implementing STEM on a wider scale.

Year: 2014

Location: National

Findings: Two areas of potential impact of integrated STEM were identified: 1) learning and achievement and 2) interest and identity.

National Research Council. (2011). *Successful K-12 STEM Education: Identifying Effective Approaches in Science, Technology, Engineering, and Mathematics*. Committee on Highly Successful Science Programs for K-12 Science Education. Board on Science Education and Board on Testing and Assessment, Division of Behavioral and Social Sciences and Education. Washington, DC.: The National Academies Press.

Sample size: Literature review

Methods: The Committee on Highly Successful Schools or Programs for K-12 STEM Education outlined criteria to identify and evaluate schools with successful programs as well as develop appropriate data sources from which to make their evaluations

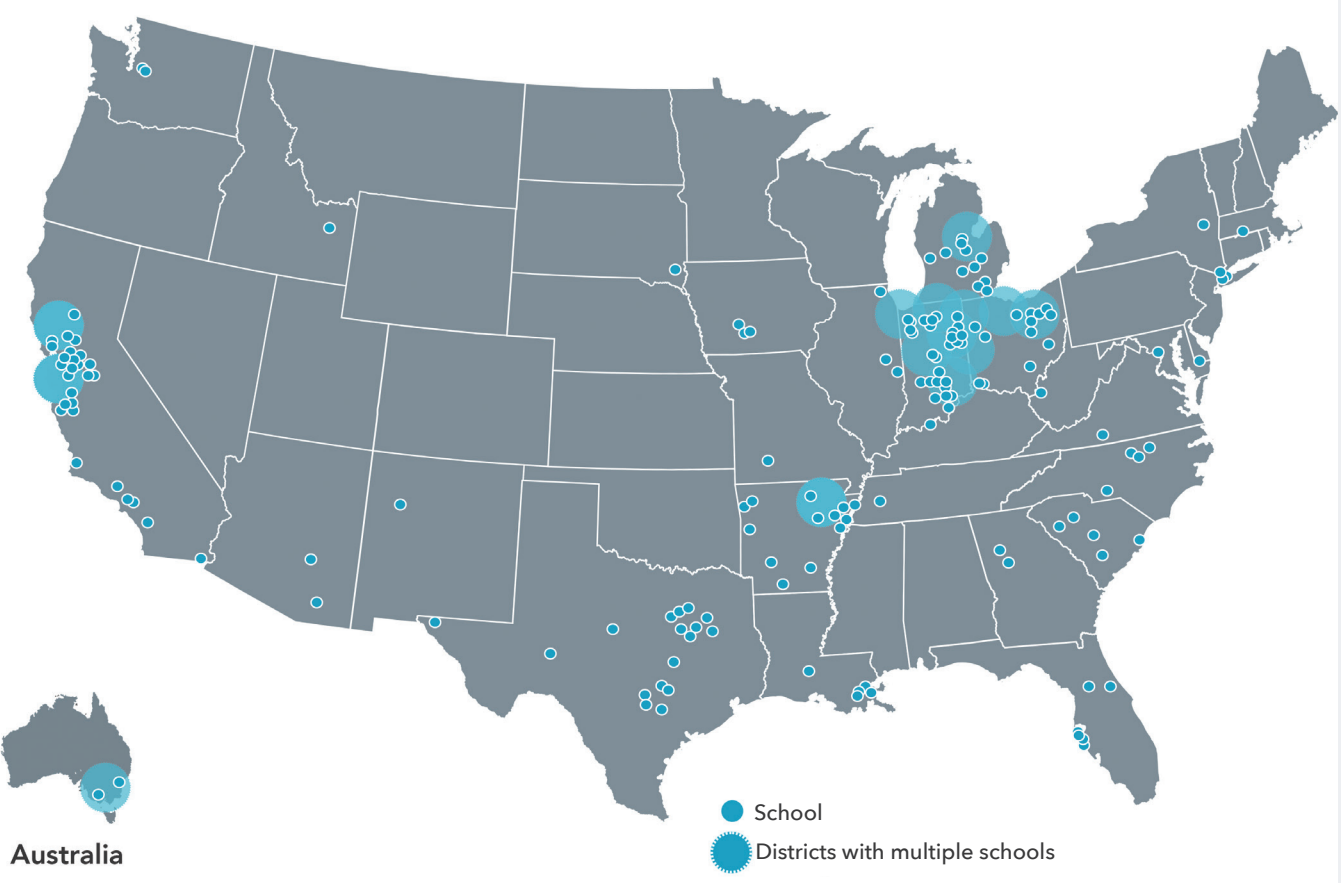
Year: 2011

Location: National

Findings: A New Tech high school was included as an exemplar in this NSF report because it embodied the characteristics of effective schools and programs in K-12 STEM.

WORKING TOGETHER
TO TRANSFORM SCHOOLS

AS A LEADING DESIGN PARTNER FOR COMPREHENSIVE SCHOOL CHANGE, NEW TECH NETWORK, A NATIONAL NON-PROFIT, WORKS CLOSELY WITH NEARLY 200 DISTRICTS AND SCHOOLS.



126	41	23	4,400	72,000	118
HIGH SCHOOLS	MIDDLE SCHOOLS	ELEMENTARY SCHOOLS	TEACHERS	STUDENTS	DISTRICTS



New Tech Network

1250 MAIN STREET, SUITE 100, NAPA, CA 94559
P: 707-253-6951 | F: 707-255-5477

WWW.NEWTECHNETWORK.ORG

